

### **REMARKS**

In the Office Action dated March 2, 2010 and marked final, the Examiner rejects claim 16 under 35 U.S.C. § 102(b) and rejects claims 1, 5-10, 12 and 14-15 under 35 U.S.C. §103(a). With this Amendment, Applicants have amended claims 1, 10 and 16. After entry of this Amendment, claims 1, 5-10, 12 and 14-16 remain pending in the Application. Reconsideration of the Application as amended is respectfully requested.

#### **Rejections under 35 U.S.C. §102**

Claim 16 is rejected under 35 U.S.C. § 102(b) as being anticipated by Kazuo (JP 2000-239738). Claim 16 has been amended to include the step of stirring the cooling liquid with a stirrer after the vapor film begins to break. Support for this amendment is in the specification in at least paragraphs [0079] and [0095].

The Examiner states in his response to arguments that the location adjustment between the oscillating devices and the work piece includes the horizontal adjustment. However, the claim requires with "an oscillation device horizontally and reciprocally moving in the cooling liquid." There is no disclosure that the movement of the device with respect to the work piece occurs in the liquid. Secondly, the Examiner contends that the oscillating motor has oscillating shafts and wings that inherently move vertically and horizontally. Again, the claim requires that the oscillation device be horizontally and reciprocally moving in the cooling liquid. The device in Kazuo only rotates, "vertically vibrating" the blades, as stated in the abstract. Again, Applicants assert that the Examiner is in error in his assertion that there is horizontal and vertical movement in the liquid.

To move prosecution forward, the Applicants have amended the claim without believing it is necessary. Kazuo does not teach or suggest stirring the vapor film only after the vapor film after it begins to break. The Examiner asserts that Kazuo teaches feeding the heated work piece into hardening agent with vibration generating in a quenching tub in order to remove the vapor film. Kazuo discloses generating oscillation by use of the two vibration generators 7 each having both generating and stirring mechanisms. In contrast, Applicants' oscillating plate 11 and a stirrer 20 are provided separately. As described in paragraph [0079], "From the above results, it became apparent that a metal part can be rapidly cooled by breaking a vapor film without the stirring of the quenching oil 1 and stirring the quenching oil 1 after the vapor films begins to be broken.", and as described in paragraph

[0095], "From the above results, it became apparent that by breaking a vapor film without stirring a quenching oil and by stirring the quenching oil after the vapor film begins to be broken, the nonuniformity of axial deformation of an obtained metal part can be improved."

Applicants submit that claim 16 is not anticipated by Kazuo and is in condition for allowance, notice of which is requested.

#### **Rejections under 35 U.S.C. §103**

Claims 1, 5-7 and 10 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kazuo (JP 2000-239738) in view of Okuda Motoshige (JP 05-017817). Claims 1 and 10 have been amended to include the step of stirring the cooling liquid with a stirrer after the vapor film begins to break.

As argued above, JP'738 does not disclose the use of an oscillation device horizontally and reciprocally moving in the liquid and does not disclose stirring the cooling liquid with a stirrer after the vapor film begins to break. The argument above is incorporated herein. As noted by the Examiner on page 5 of the Office Action, JP'738 also does not disclose introducing a gas above the liquid surface level.

JP 05-017817 (JP'817) discloses in paragraph [0012] that a stirrer 11 is arranged. However, there is no disclosure of the timing of the stirrer 11 operation. In other words, JP'817 does not hint or suggest "stirring the quenching oil (the cooling liquid) after the vapor film begins to break". Accordingly, combining JP'817 with Kazuo does not render obvious claims 1 and 10 and those depend therefrom. One skilled in the art would not deduce from the cited combination the combination of elements claimed. Accordingly, Applicants respectfully submit that claims 1, 5-7 and 10 are in condition for allowance, notice of which is requested.

Claims 8, 9, 12 and 14-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kazuo (JP 2000-239738) in view of Okuda Motoshige (JP 05-017817) as applied to claims 1 and 10, and further in view of Saburo et al (JP 2003-286517). Claims 8, 9, 12, 14 and 15 depend from either claim 1 or claim 10 to include all of the limitations therein. As argued above, Kazuo does not disclose 1) the use of an oscillation device horizontally and reciprocally moving in the liquid, 2) stirring the cooling liquid with a stirrer after the vapor film begins to break, and 3) introducing a gas above the liquid level, all of

which are recited in claims 1 and 10. JP'817 fails at least to disclose stirring the cooling liquid with a stirrer after the vapor film begins to break. As noted in the abstract of JP'517, stirring occurs throughout the entire process disclosed therein. Therefore, the combination fails to teach, suggest or render obvious claims 1 and 10 and any claim depending from them as there is not teaching to one skilled in the art to stir the liquid only after the vapor film begins to break.

Accordingly, claims 8, 9, 12, 14 and 15 are in condition for allowance, notice of which is requested.

### Conclusion

It is submitted that this Amendment has antecedent basis in the Application as originally filed, including the specification, claims and drawings, and that this Amendment does not add any new subject matter to the application. Reconsideration of the Application as amended is requested. It is respectfully submitted that this Amendment places the Application in suitable condition for allowance; notice of which is requested.

If the Examiner feels that prosecution of the present Application can be expedited by way of an Examiner's amendment, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

YOUNG BASILE  
HANLON & MACFARLANE P.C.



Francine B. Nesti  
Registration No. 53376  
(248) 649-3333  
(248) 649-3338 Fax

3001 West Big Beaver Rd., Suite 624  
Troy, Michigan 48084-3107